

REMARKS

Claims 1, 2 and 6-46 are pending in this application. Claims 3, 4 and 5 have been canceled. No new matter has been introduced.

In the Office Action, the claims are rejected under 35 U.S.C. §103(a). Applicants respectfully traverse the rejection.

In the present invention, at least one main image (for example, main image 181a in FIG. 5) and at least one sub image (for example, sub images 181b in FIG. 5) are generated on the basis of at least one medical image, and one image to be displayed by synthesizing the main image and the sub image is generated (for example, medical image monitoring screen 181 in FIG. 5).

Therefore, in the present invention, the main image and the sub image are displayed on the same screen to easily diagnose a patient by observing the main image and the sub image.

Further, in claim 1 and 45, a main image and a sub image are generated by determining a gradation processing condition so as to make the average gradient of the sub image be smaller than the average gradient of the main image. Consequently, in the main image for a diagnosis purpose, sufficient contrast can be given to the image diagnosis of lesion shadow. Moreover, in the sub image for a reference purpose, the whole image can be fitted into a density range within which the image can easily be observed. Thus, the location relation between a subject and an annotation can be easily expressed (See page 8 lines 9 to 25, and page 53 line 4 to page 60 line 9 of the specification).

Further, in claim 46, a main image and a sub image are generated by determining a gradation processing condition so as to make the average gradient of the sub image have a sign value opposite to a value of the average gradient of the main image. Consequently, sufficient

contrast can be given to the image diagnosis of lesion shadow. Moreover, in the sub image for reference purpose, black and white of the image is inverted. Then, the boundary between a subject and its background is shown with density to be observed easily, and the location relation between the subject and annotation can be easily expressed (See page 9 lines 1 to 17, and page 53 line 4 to page 60 line 9 of the specification).

On the other hand, the cited references do not disclose nor suggest the above features. In particular, in Kim (USP. 5,963,665), it is only disclosed that the contrast of the image is enhanced by using mean-separate histogram equalization (MSHE) (See BACKGROUND OF THE INVENTION).

In detail, in Kim, the input image is divided into two sub-image groups $\{X\}_L$ and $\{X\}_U$ based on the mean level X_m of the image, a cumulative density function (CDF) for each sub-image is calculated and the respective sub-images $\{X\}_L$ and $\{X\}_U$ are independently histogram-equalized by mapping the samples of $\{X\}_L$ into $(0, X_m)$ and the samples of $\{X\}_U$ into (X_{m+1}, X_{L-1}) , respectively, according to the CDFs (See column 4 lines 3 to 53).

Therefore, in Kim, the main image and the sub image do not coexist on the same screen. The present invention is different from Kim. Because Kim does not disclose that the main image and the sub image are displayed on the same screen at the same time, it is not disclosed nor suggested that a patient is diagnosed by observing the main image and the sub image on the same screen. Further, Kim does not disclose the relation between the average gradient of the main image and that of the sub image.

Therefore, in Kim, it is not disclosed that the gradation processing conditions are determined so as to make the average gradient of the sub image for a reference purpose be

smaller than the average gradient of the main image for a diagnosis purpose or a gradation processing condition is determined so as to make the average gradient of the sub image have a sign value opposite to a value of the average gradient of the main image.

Therefore, Applicants firmly submit that the present application is allowable


In view of the above remarks, Applicant respectfully requests withdrawal of the rejection.

Since all claims are in a condition for allowance, please issue a Notice of Allowability. Should the Examiner have any questions regarding this response or comments that would move the case towards allowance, the Examiner is invited to call the undersigned attorney of record.

Respectfully submitted,

Date: January 4, 2008

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